The relationship between lifestyle factors and mental health among junior high school students in Japan

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Objectives

In this study, we aimed to clarify the relationship between lifestyle factors and mental health of junior high school students in urban and rural areas of Japan and the relatively high suicide rate of those in rural areas, as well as to obtain suggestions concerning measures for improving mental health from childhood.

Background and Aims

Suicide rates are highest in northern Japan, although the regional ubiquity of suicide is also notable. The relationship between a child's lifestyle and their mental health status has not yet been clarified. We believe that maintain good mental health from childhood will lead to the prevention of suicide.

School grade and sex

	1		2		3	
	N (%)		N (%)		N (%)	
Rural boys	30	(6.7)	114	(25.4)	28	(6.3)
Urban boys	112	(25.0)	82	(18.3)	82	(18.3)
Rural girls	20	(4.5)	124	(28.0)	31	(7.0)
Urban girls	84	(19.0)	83	(18.7)	101	(22.8)

Frequency comparison (Boys)

	Rural		Urban		P
	N (%)		N (%)		
Cram school, Yes	37	(21.5)	185	(67.0)	<0.001
Exercise, Yes	172	(100.0)	247	(89.5)	<0.001
Smartphone ownership	46	(26.7)	191	(69.2)	<0.001
Someone to talk to, Yes	158	(91.9)	231	(83.7)	0.013
Sense of acceptance, Yes	157	(91.3)	218	(79.0)	<0.001
Lack of breakfast	34	(19.8)	34	(12.3)	0.033
Short sleep	14	(8.1)	52	(18.8)	0.002

Chi square test

Frequency comparison (Girls)

	Rural		Urban		P
	N (%)		N (%)		
Cram school, Yes	61	(34.9)	215	(80.2)	<0.001
Exercise, Yes	174	(99.4)	220	(82.1)	<0.001
Smartphone ownership	53	(30.3)	203	(75.7)	<0.001
Someone to talk to, Yes	168	(96.0)	239	(89.2)	0.010
Sense of acceptance, Yes	160	(91.4)	231	(86.2)	0.094
Lack of breakfast	24	(13.7)	40	(14.9)	0.723
Short sleep	23	(13.1)	69	(25.7)	0.001

Chi square test

Conclusions

WHO-5 score was associated with a low sense of acceptance in boys from both urban and rural areas. In terms of measures for mental health improvement, including depression prevention, it was suggested that it is necessary to create an environment that heightens acceptance in interpersonal relationship and make consultations.

Materials and Methods

In this cross-sectional observational study, anonymous self-administered questionnaires were distributed to students at junior high schools in rural areas of northern Japan and an urban area in Tokyo. The questionnaire included the items from the World Health Organization Well-Being Index (WHO-5) and items pertaining to lifestyle. Responses were collected from 891 people. We conducted a multivariate logistic regression analysis which included the variables that produced significant differences according to the descriptive analyses. This study was approved by the Ethics Committee.

WHO-5 Score

	Rural		Urban		P
	Mean (SD)		Mean (SD)		
Boys	18.1	(4.8)	15.8	(5.8)	<0.001
Girls	17.9	(4.4)	15.1	(5.7)	<0.001

Student's t-test

Comparison of life time

	Rural		Urban		P
	Mean (SD)		Mean (SD)		
Boys					
sleep duration	526.3	(45.9)	520.2	(66.6)	0.289
TV view	113.8	(72.8)	110.5	(92.5)	0.695
Game time	103.5	(70.5)	118.0	(111.7)	0.146
Home work	82.9	(35.2)	90.3	(57.5)	0.158

Girls

sleep duration	513.0	(45.7)	499.9	(63.0)	0.018
TV view	104.4	(63.8)	106.7	(75.5)	0.744
Game time	78.9	(69.4)	91.6	(93.8)	0.20
Home work	102.1	(43.9)	114.9	(71.5)	0.037

Student's t-test

Results of a multivariate logistic regression model to WHO-5

	Rural		Urban	
	aOR (95%CI)		aOR (95%CI)	
Boys				
Cram school	1.42	(0.6-3.6)	1.10	(0.6-1.9)
Smartphone	0.36	(0.1-1.0)	0.80	(0.5-1.4)
Sense of acceptance	5.32	(1.7-16.6)	2.69	(1.5-4.9)
breakfast	0.75	(0.3-1.9)	0.41	(0.2-0.9)
Short sleep	1.85	(0.6-6.2)	1.44	(0.8-2.8)

Girls

Cram school	1.20	(0.5-2.7)	0.83	(0.4-1.7)
Smartphone	1.12	(0.5-2.6)	1.12	(0.6-2.1)
Sense of acceptance	1.84	(0.5-6.1)	5.29	(2.3-12.3)
breakfast	0.73	(0.2-2.1)	1.03	(0.5-2.2)
Short sleep	1.67	(0.6-4.8)	2.34	(1.3-4.4)

There are no COI-related companies that should be disclosed.